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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,269	01/12/2001	Satoshi Iuchi	3914-3	9211

7590 01/03/2002

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EXAMINER

COLLINS, CYNTHIA E

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 01/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/758,269

Applicant(s)

IUCHI ET AL.

Examiner

Cynthia Collins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-14 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

1. Applicants are reminded that nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another. These sequences are thus deemed to normally constitute **independent and distinct** inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, each such nucleotide sequence is presumed to represent an independent and distinct invention, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.141 et seq. This requirement is not to be construed as a requirement for an election of species, since each nucleotide and amino acid sequence is not a member of a single genus of invention, but constitutes an independent and patentably distinct invention.

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1, 3, 4 and 12, drawn to a DNA encoding a protein of SEQ ID NO:2, classified in class 536, subclass 23.6, for example.
- II. Claims 1, 3, 4 and 12, drawn to a DNA encoding a protein of SEQ ID NO:6, classified in class 536, subclass 23.6, for example.
- III. Claims 1, 3, 4 and 12, drawn to a DNA encoding a protein of SEQ ID NO:10, classified in class 536, subclass 23.6, for example.
- IV. Claims 1, 3 and 12, drawn to a DNA encoding a protein of SEQ ID NO:12, classified in class 536, subclass 23.6, for example.
- V. Claims 1, 3 and 12, drawn to a DNA encoding a protein of SEQ ID NO:14, classified in class 536, subclass 23.6, for example.

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- VI. Claims 1, 3 and 12, drawn to a DNA encoding a protein of SEQ ID NO:16, classified in class 536, subclass 23.6, for example.
  - VII. Claim 2, drawn to a DNA encoding an antisense RNA complementary to a transcript of a gene encoding a protein having neoxanthin cleavage activity, classified in class 536, subclass 24.5, for example.
  - VIII. Claim 2, drawn to a DNA encoding an RNA comprising a ribozyme activity which cleaves a transcript of a gene encoding a protein having neoxanthin cleavage activity, classified in class 536, subclass 24.5, for example.
  - IX. Claim 2, drawn to a DNA encoding an RNA which inhibits by cosuppression the expression of a gene encoding a protein having neoxanthin cleavage activity, classified in class 536, subclass 24.5, for example.
  - X. Claims 5-11 and 13-14, drawn to a transgenic plant wherein the expression of a gene encoding a protein having neoxanthin activity is increased, and to methods of transforming plant cells with a DNA encoding a protein having a neoxanthin cleavage activity, classified in class 800, subclass 289, for example.
  - XI. Claims 5-11 and 13-14, drawn to a transgenic plant wherein the expression of a gene encoding a protein having neoxanthin activity is decreased, and to methods of transforming plant cells with a DNA encoding a protein having a neoxanthin cleavage activity, classified in class 800, subclass 285, for example.
3. The inventions are distinct, each from the other because of the following reasons:
4. The inventions of Groups I-XI are distinct products. The DNAs of Groups I-IX and the transgenic plants of Groups X and XI are structurally and functionally distinct from one another

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and can be used in different methods, such as a method of hybridization for the DNAs of Groups I-IX, or a method of breeding for the transgenic plants of Groups X and XI.

5. The DNAs of Groups I-IX are structurally and functionally distinct from one another and can be used independently in different methods. The DNAs of Groups I-III are derived from three different *Arabidopsis thaliana* genes each encoding a different protein having a neoxanthin cleavage activity, the DNA of Group IV is derived from a *Vigna unguiculata* gene encoding a protein having a neoxanthin cleavage activity, the DNA of Group V is derived from a *Zea mays* gene encoding a protein having a neoxanthin cleavage activity, the DNA of Group VI is derived from a *Lycopersicon esculentum* gene encoding a protein having a neoxanthin cleavage activity, the DNA of Group VII encodes an antisense RNA, the DNA of Group VIII encodes an RNA comprising a ribozyme activity, and the DNA of Group IX encodes an RNA which inhibits gene expression by cosuppression.

6. The transgenic plants of Groups X and XI are structurally and functionally distinct from one another because the expression of a gene encoding a protein having neoxanthin activity is increased in the transgenic plants of Group X, whereas the expression of a gene encoding a protein having neoxanthin activity is decreased in the transgenic plants of Group XI.

7. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, their recognized divergent subject matter, and the requirement for different areas of search, restriction for examination purposes as indicated is proper.

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8. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

9. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Remarks***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (703) 605-1210. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Hutzell can be reached on (703) 308-4310. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and 1 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

CC  
December 27, 2001

ELIZABETH F. McELWAIN  
PRIMARY EXAMINER  
GROUP 1600

